ENVIRONMENT ASSESSMENT
(PROJECT NUMBER BI 99-840)

BLACKFEET NATION
BLACKFEET COMMUNITY WATER PROJECT
BLACKFEET INDIAN RESERVATION
GLACIER COUNTY, MONTANA

Prepared for:

Rural Development/Rural Utilities Services
U.S. Department of Agriculture

Department of Health and Human Services
U.S. Public Health Services
Indian Health Service

Bureau of Indian Affairs
Blackfeet Agency

Environmental Protection Agency
Region 8

Town of Browning

East Glacier Water and Sewer District

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1.0 PURPOSE AND NEED OF PROJECT

1.1 INTRODUCTION

This Environmental Assessment (EA) of the proposed Blackfeet Community Water Project has been prepared to satisfy the requirements of the National Environmental Policy Act (NEPA), the regulations of the Council on Environmental Quality (CEQ), the provisions of the Guide for Preparing the Environmental Report for Water and Waste Projects (RUS Bulletin 1794A-602), the Environmental Review Manual of the Indian Health Service (Indian Health Service 1993), and consideration of environmental matters. A Uniform Environmental Checklist and an Environmental Review were completed for this project in 1998, in accordance with the provisions of NEPA and other pertinent environmental regulations, and is attached as Appendix D. The Environmental Review concluded that, because of the magnitude and scope of the proposed project, the proximity of the proposed project to Glacier National Park, and potential concerns regarding treatment processes being considered, additional environmental impact review and consideration through the preparation of this EA is required. Information used to complete the environmental impact analyses contained in this EA was obtained from historical records, from federal, state, and tribal agencies, and from on-site observations and investigations completed during site visits in 2000 and 2001.

It is the purpose of this Environmental Assessment (EA) to:

1. Accomplish compliance with the environmental impact evaluation procedures of the National Environmental Policy Act (NEPA), the regulations of the Council on Environmental Quality (CEQ), the requirements of the Rural Utilities Service Guide for Preparing the Environmental Report for Water and Waste Projects, and the Environmental Review Manual of the Indian Health Service (Indian Health Service 1993);

2. Determine the need for the preparation of an Environmental Impact Statement (EIS), based on the impact evaluations contained in the EA;

3. Provide site-specific identification, evaluation and consideration of potential environmental impacts and mitigation information useful to the Blackfeet Tribe, Rural Development/Rural Utilities Service (RUS), Indian Health Services (IHS), and the Bureau of Indian Affairs (BIA) during the reviews and decisions regarding construction and operation of the proposed project.

1.2 DESCRIPTION OF THE PROJECT

The project area and service area is located on the Blackfeet Indian Reservation in Northwestern Montana. The immediate area to be served by the proposed project is the Town of Browning, the surrounding Tribal Housing Projects, and the community of East Glacier. Browning is located in the west-central portion of the Blackfeet Indian Reservation, and is the government seat of the Blackfeet Nation. East Glacier is located in the SW corner of the Blackfeet Indian Reservation. (see Figure 1-1)

The Blackfeet Tribal Business Council has applied to Rural Development for assistance in financing the Blackfeet Community Water Project. The proposed project is to construct a water treatment plant, intake structure, and water distribution system (buried pipeline) to supply both Browning and East Glacier with drinking water utilizing water obtained from the Lower Two Medicine Reservoir, a source that offers an adequate water supply and that provides a significant amount of storage. A map illustrating the locations of the proposed facilities is located in the map pocket of this EA. The goal of the water treatment plant is to meet the present and future water quality standards set forth in the Safe Drinking Water Act Amendments. Water distribution mains will then be constructed to supply water to East Glacier and Browning. The anticipated cost of the project is approximately 12.5 million dollars. Rural Development has been asked to provide approximately half of that amount. The Environmental Protection Agency (EPA), Indian Health Service, Blackfeet Housing, Economic Development Administration, and the Treasure State Endowment Program have all committed funding for or applications have been submitted for funding for this project. This project will be owned and operated by the Blackfeet Tribe, and will provide safe drinking water to the residents of East Glacier, as well as to the residents of Browning. Water for East Glacier will be purchased from the Tribe, and it is anticipated that the new treatment plant will also serve Glacier Park Inc., which would be a large consumer of treated water.

The Blackfeet Community Water Project will be constructed in two phases to utilize the funding sources more efficiently. The first phase will include construction of the lake intake pumping system, a raw water intake main, water treatment plant, 200,000-gallon storage tank and water main to East Glacier. The second phase will include the construction of a 500,000-gallon storage tank and water main to Browning. It is planned to begin construction of the intake pumping system by October 2001. In addition to the intake and treatment plant, a pipeline will be installed from the plant to the service areas. These facilities are located on Indian Tribal, Trust, allotted, and fee owned land. The water treatment plant, intake structure and storage tank will be constructed on Blackfeet Tribal Land. The Bureau of Indian Affairs (BIA) and the Indian Health Services (IHS) will be cooperating agencies in the development

FIGURE 1-1.

Figure 1.1 front

Figure 1.1 back

of the subject environmental compliance. The BIA intends to use the analysis contained within this EA, and adopt the completed EA document as analysis for National Environmental Policy Act compliance, regarding leases, easements, rights of way, and associated permits that the BIA may approve regarding Indian trust acreage.

The proposed intake structure in Lower Two Medicine Reservoir will use a USF Johnson Intake Screen or an approved equal. The preliminary design is for one tee-shaped intake screen. The screen will have 0.125 inch slot openings and will have an open area of 50 percent. The intake screen will have a flanged diameter of 18 inches and can produce a minimum of 3,000 gpm or raw water. The intake screen will be fitted with an air backwash system to allow for hand free cleaning of the screen. The intake building will house four intake pumps. Preliminary designs call for submersible pumps, with each pump capable of producing 1,000 gpm.

The intake water main from the intake screen to the intake pump house will be either 20-inch HDPE pipe or 18-inch Ductile Iron pipe. The intake main from the intake pump house to the treatment plant will be 16-inch HDPE pipe. The water main supplying East Glacier will be 10-inch class 200 PVC pipe, meeting AWWA C-900. The water main supplying Browning will be 20-inch class 200 PVC pipe, meeting AWWA C-900. All pipe will have a minimum bury depth of 6-feet from the top of the pipe to ground surface. Excavation of trenches will be done using excavators and backhoes.

Pipeline trenching, backfilling and topsoil conservation will occur in compliance with the Specifications, Technical Provisions, Section 10, Excavation, Bedding and Backfill for Pipelines and Appurtenant Structures (see Appendix D). A 50-foot wide right-of-way will be obtained prior to pipeline construction. For pipeline construction through timber, the right-of-way will be cleared of trees and vegetation. Clearing of the right-of-way will be done using bulldozers. In areas where the pipeline construction will require crossing of streams and streambank riparian areas, clearing of vegetation for the right-of-way will be reduced to the minimum required for safe equipment access and operation. Once construction is completed, the right-of-way will be reclaimed by planting native trees and shrubs (in forested and/or riparian habitat), and seeding with an approved certified weed free seed mixture. Following installation of the pipeline and reclamation, a 10-foot wide area within the pipeline corridor will remain cleared of trees to allow for periodic access to the pipeline for inspections and potential maintenance. Erosion control measures will be implemented during the construction of the project facilities and maintained following reclamation as required. Silt Fences and/or hay bales will be placed where they are determined to be necessary. Consultation with Blackfeet Tribe and Bureau of Indian Affairs will occur to assist in the placement and maintenance of appropriate erosion control measures.

The Proposed Action will require crossing of the Two Medicine River with the 20-inch water main to Browning, as well as other small stream crossings associated primarily with the route of the 10-inch pipeline to East Glacier (Forty Mile Creek and Forty-one Mile Creek). The proposed pipeline route to Browning will require crossing of Willow Creek. The crossing of

the Two Medicine River will likely be accomplished using standard trenching methods. Use of a horizontal boring method has been evaluated, but rejected because of the significantly larger amount of surface disturbance on each bank required to accommodate the boring activity. Crossings of the other small streams will be accomplished by using standard trenching methods. All crossings of small streams are proposed to place the top of the pipeline a minimum of 6 feet below the streambed. The crossing of Two Medicine River will be installed to insure burial depth sufficient too prevent exposure by flood-flow scouring events.

Reclamation of all non-woodland/non-riparian disturbed areas will include reseeding with certified weed free pure live seed at a rate and composition of vegetation that has been recommended by the BIA Blackfeet Agency, Office of Range Management Specialist in consultation with the allottee surface owners. The proposed seeding mixture and rate is shown below.

3 lbs. Western Wheatgrass "Rosana"
2 lbs Sheep Fescue
3 lbs Canada Bluegrass
2 lbs Mountain Brome
3 lbs Bluebunch Wheatgrass "Secar"
13 lbs. Pure Live Seed per Acre

Reclamation of disturbed woodland and riparian areas associated with the proposed project construction (primarily the pipeline construction right-of-way route to East Glacier) will include seeding native plant species, and planting of native shrubs and trees developed in consultation with the Blackfeet Tribe and the BIA Blackfeet Agency, and in consultation with allottee surface owners.

Three-phase power is required for operation of the microfiltration plant. The local utility company has been contacted and has assured IHS that three-phase power is available and can be supplied to the proposed plant site. (IHS 2001)

1.3 SELECTION OF THE PROPOSED ACTION

A discussion of alternatives considered during the planning and development of the Proposed Action is in Section 2.0 of this EA. Detailed discussions of alternatives considered, as well as the selection criteria for the Proposed Action are contained in the project's Preliminary Engineering Report (IHS 2001), and the reader is encourage to review this information.

1.3.1 Selection of Site Location and Characteristics

The Lower Two Medicine Reservoir is proposed as the raw water source and the site for the microfiltration treatment plant. The water supply at this location is more than adequate to supply Browning and East Glacier with water. The plant is proposed to be located just off

Highway 49 near the bridge crossing Two Medicine River (see Map pocket). This site was selected because the estimated construction costs are less than for an alternative located on the east side of Two Medicine River. (IHS 2001)

The Lower Two Medicine Reservoir alternative is the only location that will allow two communities to be served by one plant. This will allow for maintaining lower operation and maintenance costs. To operate and maintain two plans, it would cost the Blackfeet Tribe $6.8 million dollars over 20 years, as compared to $4.9 million for one plant over the same time period. (IHS 2001)

1.3.2 Design Criteria

Water Supply

The water supply source of Lower Two Medicine Reservoir was selected for its location, water quality, and the quantity of water. The quantity of water stored in the Reservoir is more than adequate to supply Browning and East Glacier with treated water. (IHS 2001)

Treatment

The treatment technology selected for this project is Microfiltration. This treatment technology will consistently produce water that meets the requirements set forth in the Surface Water Treatment Rule (SWTR) of the Safe Drinking Water Act Amendment with minimal operator assistance. Microfiltration has proven that it will meet current water quality requirements and can also meet proposed future requirements. (IHS 2001)

Storage

Additional storage will be available from the proposed 100,000-gallon clearwell, the proposed 200,000-gallon storage tank serving East Glacier and in the water mains supplying water to Browning and East Glacier. A 500,000-gallon storage tank is also proposed to provide additional storage for Browning. (IHS 2001)

Intake Pumping Station

The Montana Department of Environmental Quality has redundancy requirements for water treatment systems. They require that at least two pumps be installed in the event that one must be repaired or replaced. Each pump must be able to handle the design flow rate The proposed intake pumping station will have the capacity to supply the water treatment plant with required amounts of raw water. (IHS 2001)

Distribution Layout

The only change to East Glacier's distribution system will be the water main to supply water from the treatment plant to East Glacier. The proposed water main will be 10-inch C-900 PVC. The proposed water main to Browning will be 20-inch C-905 PVC. (IHS 2001)

Fire Protection

Fire flow for East Glacier can be made available from the 100,000-gallon storage tank and also the proposed 200,000-gallon storage tank. Fire flow at a rate of 1,000 gpm can be sustained for a period of five (5) hours. Implementation of the Proposed Action will allow East Glacier to meet and exceed the fire protection storage requirements set forth in Chapter 7 of the Montana Department of Environmental Quality Circular DEQ 1. Browning currently has 1.5 million gallons of storage available. An additional 663,000 gallons of storage would be available in the proposed 20-inch water main supplying Browning with treated water. Implementation of the Proposed Action would allow Browning to meet the MDEQ storage requirements for fire protection. (IHS 2001)

1.4 NEED FOR THE PROPOSED ACTION

The following description of the Need for the Proposed Action is excerpted from the "Preliminary Engineering Report – Two Medicine Surface Water Treatment Plant" prepared by the Billings Area Indian Health Service (IHS 2001). Additional detailed discussions of the history, status of existing facilities, and the need for the project are provided in the report. The following summarizes the fundamental need for the proposed action. The primary need for East Glacier is for the provision of safe drinking water, while the primary need for Browning is for the provision of an adequate, reliable, and clean drinking water supply.

1.4.1 East Glacier, Montana

The water used to supply the town of East Glacier is currently obtained from Midvale Creek (a surface water source with no filtration provided) above a diversion dam approximately one mile west of town. The intake facilities for the water supply are in poor condition. A 12 to 14-inch raw water main owned by Glacier Park Inc. (GPI), currently serves both East Glacier and Glacier Park Inc. Chlorination is the only means of treating the water currently supplied to the East Glacier Water and Sewer Districts from the Midvale Creek source. This is a violation of the Surface Water Treatment Rule of the Safe Drinking Water Act Amendments. The Montana Department of Environmental Quality (formerly the Montana Department of Health and Environmental Sciences) sent a Notice of Violation of Surface Water Treatment Requirements to the East Glacier Water and Sewer District on August 9, 1993. This was followed in March 1994 by an additional Notice of Violation covering the months of July, August, September, October, November, and December of 1993, and January 1994, as well as Notice of Violation of Public Notification Requirements. The March 1994 Notice included a required schedule for treatment of the source water sufficient to meet the treatment techniques requirements of ARM 16.20.208, and comply with the Montana Public Water Supply Act and rules implementing the Act.

The residents of East Glacier may be exposed to health risks because bacteria contamination, Giardia, and other water-borne contaminants may be present in the town's present water supply. The turbidity levels of the water supplied to the community have exceeded the 1.0

NTU MCL set by the Surface Water Treatment Rule on several occasions. East Glacier has been subject to Boil Water Notice for the past several years.

1.4.2 Browning, Montana

The Town of Browning currently relies on groundwater as the sole source of its drinking water. The original water system for the Town of Browning was constructed around 1955. This site is located approximately 5 miles west of the town, and is referred to as Flatiron Spring. In the 1960's, additional water capacity was added to the Flatiron Spring site, including a 300,000-gallon storage tank. From the 1960's to today, numerous additional improvements and renovations to the system have occurred; the most recent, completed in 1999, included the drilling of four additional wells at the site. The water supplied to the community has been tested and has not been shown to pose any health risks and the water currently meets the Environmental Protection Agency's (EPA) Primary Drinking Water Standards.

The water supply for the Town of Browning has been historically inadequate in terms of quality and quantity to serve the community, and has been well documented. Water shortages have occurred several times in prior years, is are major concern, especially for households with elders and young children. Fire flow protection for the community cannot be met with the current system. The current system also does not allow for any growth in the community. Browning's distribution system is in fair to good condition. The Town is in the process of replacing some of the older water mains. However, even after the improvements are completed, the water source will not be able to produce enough water for this rapidly growing community.

2.0 ALTERNATIVES TO THE PROPOSED ACTION

2.1 NO ACTION

Under the No Action Alternative, the proposed Blackfeet Community Water Project would not be constructed. Selection of the No Action Alternative would mean that the community of East Glacier would continue to not be able to meet State requirements for providing residents and visitors with a safe drinking water supply source, and the town of Browning would continue to not be able to provide an adequate, reliable, and clean drinking water source and supply for its residents and visitors.

In addition to the No Action Alternative, several other alternatives to the Proposed Action Alternative involving water system design, facility location, and treatment methods for development of a reliable and safe drinking water source for Browning and East Glacier were developed and evaluated by Indian Health Services (IHS) as a portion of the proposed project's Preliminary Engineering Report (IHS 2001). A summary of these alternatives considered, but dismissed from further consideration is below. Additional details regarding

the consideration of these project alternatives are provided in the Preliminary Design Report (IHS 2001).

2.2 ALTERNATIVES CONSIDERED BY DISMISSED FROM FURTHER EVALUATION

2.2.1 Browning Water System Alternative

Cut Bank Creek:
A separate water collection and treatment plant could be constructed along Cut Bank Creek to service the Town of Browning. Two sites provide potential raw water sources: The Evans Site and the Community Test Well Site.

Evans Site
In June 2000, the Town of Browning and Blackfeet Housing developed a well approximately 6 miles northwest of Browning along Cut Bank Creek to determine the potential for groundwater yield. Well testing indicated that the amount of water that could be produced from this well is approximately 25-30 gpm. This amount was not an adequate amount of water to warrant the development of this site further.

Community Test Well Site
In May 1999, Blackfeet Housing had three (3) wells drilled to determine if enough groundwater was available to supply Browning with water. This site is located approximately 5 miles northwest of Browning. The three wells were drilled approximately 100-200 feet north of Cut Bank Creek. Well drilling results, however, confirmed that this groundwater is likely under the influence of surface water. Based on well log data, it was determined that each of these wells could produce 20-40 gpm. If this site were to be utilized, however, a surface water treatment plant and a river intake structure would be required, since all three wells indicated that most groundwater was found within 30 feet of the ground surface.

A surface water treatment plant could be constructed at either Evan's or Takes Gun site to supply Browning with water. Takes Gun provides the most logical choice for several reasons. This site is approximately 2 miles closer to Browning than the Evan's site, the Blackfeet Tribe has sufficient land just to the north of Cut Bank Creek, and there is an existing dirt road that could provide access to the site year-round. Development of this site as a water supply for Browning, however, has several concerns, and does not provide the benefits of the Proposed Action. These concerns include the need to construction a collection or infiltration galley, no existing storage available to draw water from and the need to construct a diversion dam to provide storage, extreme turbidity spikes during spring runoff, low flow during drought conditions, partially and freezing of the creek during winter, and the need to construct an additional 500,000 gallon storage tank. While a treatment plant could be constructed at this location, IHS has some concerns about this raw water source. These concerns are discussed in the Preliminary Enginnering Report prepared by the Billings Area

IHS. It could met Browning's current needs, but may have trouble supplying enough water twenty years from now. The Town of Cut Bank also utilized Cut Bank Creek as a raw water source for a water treatment plant. During drought years, the Cut Bank water plant operators have difficulty meeting the water demands of Cut Bank. If Browning were to utilize Cut Bank Creek to supply a new water treatment plant with raw water, that would take approximately 2-3 million gallons of water away from the Town of Cut Bank. This would make it extremely difficult for the Cut Bank water treatment plant to meet the water demands of the community. If this site were to be utilized, the wells at Flatiron that currently supply Browning's water would have to remain online in the event that not enough water were available from Cut Bank Creek to meet the communities demands.

2.2.2 East Glacier Water System Alternative

Midvale Creek:

Midvale Creek is the water source currently used by East Glacier, and no water treatment system is currently available. As a result, the town's water system does not comply with EPA's Surface Water Treatment Rule. The water quality of Midvale Creek changes seasonally. During the winter months, the quality of water is usually good, but it is still in violation of the Surface Water Treatment Rule. During spring runoff and storm events, the water becomes extremely turbid. This is a serious health concern since bacteria and other contaminants may be present in the water supply. If Midvale Creek is to remain a viable water source for East Glacier, a water treatment plant in East Glacier would be required. Land for the proposed plant site would need to be purchased by the Tribe from Glacier Park Incorporated (GPI). In addition, because the existing Midvale Creek intake structure is extremely old and has not been well maintained, it is in need of repair/replacement. Selection of this alternative would not allow for the construction of a single water treatment plant and single water source to service both East Glacier and Browning, and for this reason has been dismissed from further evaluation.

2.2.3 Treatment Plant Site Location

Four potential treatment plants sites were considered during the development of the Proposed Action. Alternative Site #1 is located on Tribal land, approximately 1 miles southeast of the Lower Two Medicine Dam, and has an existing access road. The plant would be located approximately 100 feet lower in elevation that the proposed 500,000-gallon storage tank, and water would need to be pumped to the storage tank. To use this site to serve East Glacier, the Two Medicine River would need to be crossed twice with pipelines; once with the intake main and a second time with the main to supply East Glacier with treated water. To supply the treatment plant with raw water, the intake pumps would have to lift the water over 200 feet of head. This would increase the power consumption and raise operating costs. For these reasons, Alternative Site #1 was dismissed from further evaluation.

Two other treatment plant site alternatives were also considered (see Map Pocket). These two sites were located above and east of Highway 49 in the approximate area of the Two Medicine Dam. These two sites were evaluated with a Geo-Technical Engineering study

conducted by NTL Engineering (NTL Engineering 2000), and were determined to be located in an active landslide area. For this reason, these two plant sites were dismissed from further consideration.

2.2.4 Treatment Alternatives

No Treatment:
Providing no water treatment for East Glacier is not an alternative. East Glacier's current water supply is in violation of EPA's Surface Water Treatment Rule under the Safe Drinking Water Act Amendments. Boil water orders have been issued to the East Glacier Water and Sewer District as have Notice of Violations. Suitable ground water sources are not available, as demonstrated by the 1980-81 attempt to drill near Railroad Creek. IHS has also drilled several wells for individual homeowners near East Glacier. The wells drilled were low yielding and often contained high levels of iron and manganese. A surface water treatment plant is required to bring East Glacier into compliance with the Safe Drinking Water Act. (IHS 2001)

Browning's current water supply does meet EPA's Primary water quality standards, but does not meet the Secondary standards because of the high levels of iron and manganese. The lack of water, however, is a major concern. The Indian Health Service has performed extensive well drilling on the Blackfeet Reservation. Many hundreds of wells for individual homes have been drilled, as have several community test wells. None of the wells have encountered an aquifer that could adequately supply water to the Town of Browning. Most of the wells drilled have produced a maximum of 20 gpm and many are surface water influenced. Because of the extensive amount of wells drilled, it has been decided that the ground water sources near Browning have been exhausted. The only option to provide enough water to meet Browning's needs now and in the future would be to construct a surface water treatment plant. (IHS 2001)

Conventional Treatment:
Conventional Treatment is an alternative to the Proposed Action treatment alternative of Microfiltration. Conventional treatment has been dismissed by IHS from further evaluation, however, because of several factors, including a requirement for a large surface disturbance (building footprint) required for a conventional treatment plant, and a need to use chemicals to assist in treatment. Microfiltration does not require the use of chemicals. Use of chemicals for a conventional treatment plant would result in the presence of chemicals in the backwash water. Because the backwash water from the plant would need to be discharged into the Lower Two Medicine River, and require a surface water discharge permit from the EPA, use of convention treatment would require further treatment of the backwash water prior to discharge for removal of chemicals and meeting of permit water quality requirements. For these reasons, this alternative was dismissed from further evaluation.

2.3 PROJECT REVIEW AND APPROVAL

2.3.1 Interagency Scoping and Public Involvement

As part of NEPA and *Executive Order No. 12898* compliance, public participation and outreach was sought in the form of public meetings convened in East Glacier (June 24, 2000), and Browning, Montana (June 25, 2000) on the Blackfeet Reservation, by the Blackfeet Water Resources Department and IHS. These scoping meetings were held for the purpose of gathering public comments and concerns regarding the proposed project.

No environmental issues or concerns were raised by the public at the meeting in East Glacier, Montana. The following comments were received at the meeting in Browning, Montana:

- Will the Lower Two Medicine Reservoir provide enough water to meet both the irrigation and municipal water use needs?

- Will pipeline construction near Lower Two Medicine Reservoir result in a slumping problem?

In addition to the scoping meetings, a Public Notice was placed in the July 12th and 19th, 2001 issues of the Glacier Reporter and also in the Great Falls Tribune on June 27th, 28th and 29th, 2001. The Public Notice included a description of the proposed project and the environmental assessment process being completed for the project (see Appendix B). The notice requested public comments regarding any environmental concerns associated with the proposed Blackfeet Community Water Project.

In addition to the public scoping meetings, and notices, preparation of this EA has involved interagency meetings and on-site inspections with representatives of the Tribe, BIA, IHS, and RD/RUS. Concerns identified at these meetings and on-site inspections included the following:

- Adherence to regulatory and operational requirements for the protection of groundwater and surface water resources, as well as other environmental and cultural resources of the Blackfeet Nation.

- Safe drinking water and improved water supply benefits to be derived by the residents of Browning and East Glacier from the construction and operation of the project.

- Compliance with the provisions of the Endangered Species Act.

3.0 AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES

3.1 OVERVIEW OF THE SURROUNDING AREA

The proposed project is located on the western edge of the Blackfeet Indian Reservation (Reservation), near East Glacier, Montana. The Reservation is located in the western portion of north central Montana and occupies an area of about 1.5 million acres. Most of the Reservation is located in Glacier County. It is bound on the west by Glacier National Park, on the south by Birch Creek, on the east by Birch and Cut Bank Creeks, and on the north by Canada. The general topography is a rolling plain rising westward to the Continental Divide. The average elevation ranges from 3,800 to 5,000 above mean sea level (AMSL), excluding high mountain peaks. (Indian Health Services 2000)

The Reservation has cold, relatively dry winters and fairly warm summers with a pronounced "wet" season in May and June. The weather extremes are more severe in the western portion of the Reservation when compared to the eastern portions. Average rainfall ranges from 32 inches in the west to 11 inches in the east. Temperatures vary from extremes of –56 degrees F in the winter to 99 degrees F in the summer. (Indian Health Services 2000)

The proposed project site is subject to persistent, westerly winds. Air quality is excellent with minimal pollution. Wind speeds have reached a maximum of 90 to 100 miles per hour (mph) for short periods of time. Sustained wind speeds of 50 to 60 mph have been recorded for having lasted several consecutive days at various times of the year. (Redhawk Laboratories, Inc. 1997)

East Glacier, Montana, is a resort community located adjacent to the southeast boundary of Glacier National Park, and has approximately 500 year-round residents. During the summer tourist season the transient population may exceed 1100 people. Blackfeet Housing has long-term projections to build 100 new homes that will house approximately 300 more residents. (Indian Health Services 2000)

The Town of Browning, located approximately 13 miles east of the project area has a population of 5,029, and is the seat of Tribal Government, as well as a major trade center for the Reservation. (Indian Health Services 2000)

3.2 ENVIRONMENTAL ANALYSIS

The preparation of a Uniform Environmental Checklist and an Environmental Review (ER) has been accomplished for this project in accordance with the provisions of the National Environmental Policy Act (NEPA) and other pertinent environmental regulations (see Appendix B). These documents concluded that the preparation of an Environmental Assessment (EA) is required for the proposed project.

Information used to complete the following environmental impact analyses was obtained from historical records, from federal, state, and tribal agencies, and from on-site observations

during site visits in 2000 AND 2001. In addition, the following documents provided information:

- Preliminary Engineering Report – Two Medicine Surface Water Treatment Plant, Billings Area Indian Health Service, Browning, Montana.

- Environmental Assessment, EA Number BF-99-93, Central Block Prospect Unit, K2 America Corporation, Blackfeet Indian Reservation, February 1999, Bureau of Indian Affairs, Blackfeet Agency, Browning, Montana.

- Environmental Assessment, EA Number B-95-05, Blackfeet Loop Natural Gas Pipeline Project, Montana Power Company, Blackfeet Indian Reservation, Glacier County, Montana, June 1995.

- A Cultural Resource Inventory of the Proposed Blackfeet Community Water Project, John Brumley, Ethos Consultants, Inc., July 2001

- Uniform Environmental Checklist and Environmental Review and Documentation, East Glacier Water Treatment, Project No. BI 98-840, January 1998, Billings Area Indian Health Service, Browning Montana.

It is IHS and RD/RUS policy to comply with applicable or relevant and appropriate requirements (ARARs) for the protection of the environment. IHS and RD/RUS actions must comply with applicable federal, state, and local ARARs. The following natural asset review and environmental analysis includes the consideration of ARARs and environmental resources pertinent to the proposed project site, including:

- Land Use/Important Farmland/Formally Classified Lands
- Wetlands/water quality
- Biological Resources
- Endangered and threatened species/critical habitats;
- Cultural Resources
- Floodplains
- Socio-Economic/Environmental Justice Issues
- Other environmental resources

3.3 LAND USE/IMPORTANT FARMLAND/FORMALLY CLASSIFIED LANDS

3.3.1 Affected Environment

Land use within and adjacent to the Blackfeet Community Water Project and associated facilities and pipelines includes a variety of uses including Tribal forest lands and associated assess roads, and a campground (Red Eagle) near lower Two Medicine Lake associated with the intake, pump house building and treatment plant building and pipeline route to East

Glacier. The proposed pipeline route from the treatment plant to Browning crosses Highway 49. Along the majority of the pipeline route to Browning, the predominant land use is associated with rangeland and native prairie. A significant portion of the proposed pipeline route to Browning parallels an existing right-of-way for Montana Power Company's natural gas pipelines, and the pipeline route crosses the route of the Great Northern Railroad (now Santa Fe Burlington Northern Railroad) in two locations. Other land uses in the vicinity of the proposed facilities include development associated with the communities of Browning and East Glacier, Montana, several improved and unimproved roads. Land ownership associated with the proposed Blackfeet Community Water Project includes Tribal, allotted, and fee lands. Appendix E contains a table identifying acreage, by ownership, associated with the construction of Phases 1 and 2 of the proposed project. Phase one construction includes approximately 15.26 acres of Tribal land, approximately 6.12 acres of allotted land, and approximately 3.34 acres of fee land. Phase 2 includes approximately 33.78 acres of Tribal land, approximately 3.23 acres of allotted land, and approximately 34.03 acres of fee land. Tribal, Trust, and allottee lands affected by the proposed project are administered by the Bureau of Indian Affairs (BIA) and are "formally classified lands" requiring the approval by the BIA of right-of-way leases associated with the proposed project construction and operation.

The proposed project does not directly or indirectly affect any important farmlands, prime forest lands, or prime rangeland.

3.3.2 Environmental Consequences

Selection of the Proposed Action Alternative will not result in significant indirect, direct or cumulative impacts to existing land use within the project area. Land disturbance associated with the construction of the proposed pipeline routes would be short-term, and allow for the continued existing land use following installation of the pipelines and right-of-way reclamation. Construction and operation of the pump house building, treatment plant building, and storage tanks would result in a long-term commitment of approximately 0.257 acres of Tribal land use to the operation of these facilities.

3.3.3 Mitigation/Compensation Measures

The impact evaluation in this EA has not identified a need or requirement for additional land use protection or mitigation/compensation measures beyond compliance with the provisions of all federal, state, and tribal regulations, including the Blackfeet Tribal and Blackfeet Indian Forest and Land Protection Stipulations, Sections 404 and 401 of the Clean Water Act, and Blackfeet Tribal Ordinance No. 90 during project development and operation.

3.4 WETLANDS/WATER QUALITY/WATER QUANTITY

3.4.1 Affected Environment

Four surface water drainages are present within the boundaries of the Blackfeet Indian Reservation. These include the Cut Bank Drainage, the Milk River Drainage, the St. Mary's Drainage, and the Two Medicine Drainage. The proposed project facilities and pipelines are located within the Two Medicine and Cut Bank Creek drainages, which are tributary to the Marias River Basin, a sub-basin of the Upper Missouri River Basin. The Maria River is formed at the eastern boundary of the Blackfeet Indian Reservation by the confluence of the Two Medicine River and Cut Bank Creek. Surface water features associated with the proposed Blackfeet Community Water Project include Lower Two Medicine Lake, and perennial and intermittent streams, as well as ephemeral drainages, pothole features, and related areas of wetlands. The proposed pipelines will require crossing of the Two Medicine River, and several small streams, including Forty Mile Creek, Forty-one Mile Creek, and a tributary of Willow Creek.

Surface water quality within the proposed project area is generally of good quality for most uses. A water quality management plan for surface waters within the Blackfeet Indian Reservation was prepared by the Blackfeet Tribe in 1981 as a portion of the 208 Program. This study involved the sampling and classification of several rivers and streams within the boundaries of the reservation. This water quality management plan has been updated by the Blackfeet Environmental Office as a portion of the 106 program.

Wetlands are habitats, regulated under Section 404 of the Clean Water Act, as subset of "Waters of the U.S." The regulatory definition of wetlands adopted by the Corps of Engineers (1987) and the Environmental Protection Agency is:

> Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Field studies were conducted June 22, 2001. The study area was traversed on foot and by vehicle to determine locations of potential wetlands and non-wetland waters of the United States (WUS). Wetlands were evaluated in the field following methods specified for a routine on-site determination in the Corps of Engineers Wetlands Delineation Manual (1987). This methodology requires that wetlands criteria for vegetation, soil, and hydrology be satisfied to identify a site as a jurisdictional wetland.

Wetlands of the project area are associated with streams and poorly drained depressions. The largest riparian area and wetland complex is associated with the Two Medicine River. The dominant tree species is black cottonwood with dense stands of red-osier dogwood, snowberry, willow, and wild rose, with a high diversity of herbaceous species. At the proposed site where the pipeline would cross the Two Medicine River, there is narrow wetland fringe, several feet wide. The stream itself is from 30-40 feet wide.

Other riverine wetlands on the segment of the project from Two Medicine Lake to East Glacier are at Forty mile Creek, Forty one mile Creek, and at two unnamed drainages. Non-

wetland waters of the U.S. are present at two ephemeral drainages on this route segment. The riverine wetlands on this route segment are narrow riparian fringes 5-10 feet wide. The high-gradient streams have incised channels and steep banks, and generally have cobbly substrates with little or no soil development.

Wetlands on the project segment from the Two Medicine River crossing to Browning are riverine wetlands associated with two un-named tributaries to Willow Creek. The wetland in Section 33 is 5-10 wide, along a high-gradient stream reach. Wetland vegetation consists of willow, beaked sedge, and field horsetail.

The largest wetland (2-30 feet wide including the stream) that would be affected by the project is an un-named tributary of Willow Creek on the boundary of Section 26 and 27. This wetland consists of a riverine fringe of willows, beaked sedge, Nebraska sedge, water hemlock, Baltic rush, camas, and iris. Beaver dams have altered the stream channel and associate vegetation.

Several depressional wetlands ("potholes) are approached by the pipeline in the project segment within 2-3 miles of Browning. These wetlands are periodically wet during years of high precipitation but had no standing water this year. Sedges, rushes, and other herbaceous species dominate these wetlands. Pipelines from the project would not result in dredging or filling these wetlands, however the pipeline would be within 30-50 feet, at the closest point, to some of these wetlands.

3.4.2 Environmental Consequences

Selection of the Proposed Action would not result in significant impacts to the project area's surface water features, water quality, wetlands or riparian areas. Pipeline construction-related impacts to perennial surface water resources (streams) would primarily include a potential for short-term increases in turbidity during trench excavation and placement of the pipeline across the streambeds. Proposed construction of the streambed crossings during the late summer and fall months, when the streams are in a low flow stage, will assist in reducing the significance of the short-term increases in stream turbidity. All crossings will be constructed as perpendicular as possible to the axis of the streams to minimize the amount of construction-related disturbance of surface water features along the proposed route. It is anticipated that construction and placement of the pipeline within the stream channels will be completed within 1-2 days at each crossing site. Streamflow will be maintained, and the streambanks will not be excavated until after completion of the streambed trench construction to protect the integrity of the banks. Following placement of the pipeline in the streambed trench, the trench will be backfilled with the removed materials and the streambed returned to its original condition. Streambanks will be properly stabilized and reclaimed following pipeline installation. A minimum of six feet of cover will be provided to protect against erosion streamflow.

Operation of the proposed water treatment plant will require obtaining a surface water discharge permit from the EPA for the discharge of backwash water to the Two Medicine

River. Because no chemicals are used in the proposed Microfiltration treatment system, and compliance with the protective provisions of the discharge permit are required, no adverse impacts to the water quality of the Two Medicine River would result.

Impacts to wetlands and associated riparian areas would be temporary (i.e., during and shortly after construction) with implementation of the proposed project. Linear riparian wetlands along perennial and ephemeral streams would be excavated during construction for placement of pipelines. Wetland vegetation would be removed and sediment would be generated. Wetland vegetation would rapidly colonize disturbed sites after completion of the pipeline and replacement of excavated substrate. Wetlands, because of high levels of moisture, typically, recover rapidly from disturbance. There would be no net loss of wetlands with construction and operation of the project; however ecological functions of wetlands (e.g., wildlife habitat, sediment/nutrient retention, and flood flow resynchronization) would be diminished until disturbed sites become revegetated. Less than 0.5 acres of wetlands would be affected by the project.

Public scoping for the proposed project identified a concern related to whether operation of the proposed project can occur without adversely affecting the existing water use commitments and needs associated with use of the lower Two Medicine Reservoir for irrigation water storage. The Bureau of Indian Affairs constructed the lower Two Medicine Dam for irrigation purposes. The proposed project is proposing to use the reservoir for a drinking water supply because of the large amount of storage that is available. The total capacity of the reservoir is 25,120 acre-feet. The active capacity of the reservoir is 19,760 acre-feet. The active capacity of the reservoir represents the water available for irrigation purposes. This leaves 5,360 acre-feed or 1.75 billion gallons of inactive capacity. The inactive portion or dead pool of the reservoir consists of the original lakebed, which is the portion that is not controlled by the dam. The intake structure for the treatment plant will make use of this inactive portion of the reservoir. The treatment plant will initially be sized to treat 2400 gpm or 3,480,000 gpd with a future capacity of 3,000 gpm or 4,320,000 gpd. However, the proposed treatment plant will not produce 2,400 gpm 24-hours per day. The estimated average production of the treatment plant in 2020 will be approximately 2.33 mgd. The top of the dead pool has an elevation of 4861 feet. The top of the intake screen will be at an elevation of 4855 feet. That leaves 6 feet of water above the screen available to supply water to the plant. To be conservative, it was assumed that 3 feet of water may be lost to evaporation or freezing. Therefore, 3 feet of water above the screen or 84.61 million gallons of water will be available to supply the plant with raw water. This condition would only be encountered in the most severe drought year. If the treatment plant produces an average of 2.33 mgd, and it is assumed no inflow or outflow, it would require 36 days to consume the 84.61 million gallons of water. However, for lower Two Medicine Reservoir to receive no inflow, both the Upper Two Medicine and Two Medicine Lakes would have to dry up first. There are also mountain springs and glacier melt that will supply water to the lakes and reservoir year-round. The amount of water available is more than adequate to supply East Glacier and Browning with treated water and still meet the irrigation water use needs, since the water for the water treatment plant will be drawn from the inactive portion of the

reservoir. Irrigation is typically done from May to September of each year, and these are the months with the highest stream flows and available runoff. (IHS 2001)

3.4.3 Mitigation/Compensation Measures

Construction of the proposed project pipeline routes affecting wetlands is proposed to occur during the late summer and fall months during the period when wetland features are typically dry or have significantly reduced surface water conditions. Care will be taken to ensure that the existing drainage gradient within the affected drainages is not significantly altered during construction and reclamation activities, and that effective erosion prevention measures are implemented during construction and reclamation within the drainages and adjacent slopes. Crossing of small streams and adjacent linear wetland/riparian areas during installation of the project's pipelines will occur perpendicular to the stream coarse to minimize the area of surface disturbance, and vegetation removal in these areas will be restricted to the minimum width necessary to accommodate construction equipment. Crossings will typically be completed in 1 – 2 days. Construction during the dry season, compliance with the protective provisions of the Blackfeet Tribe Aquatic Land Protection Ordinance no. 90, and Sections 404 and 401 of the Clean Water Act, will ensure that construction-related impacts to wetlands and riparian areas are minimized.

3.5 BIOLOGICAL RESOURCES (VEGETATION/WILDLIFE/FISHERIES)

3.5.1 Affected Environment

Vegetation

Vegetation of the project area consists of conifer and aspen forest communities and native prairie grasslands, riparian areas, and wetlands. The western part of the project area on east facing slopes and benches, from Two Medicine Lake to East Glacier, is mostly forested by Douglas-fir and quaking aspen communities with common understory shrubs including snowberry, serviceberry, Utah honey suckle, and chokecherry. Most Douglas-fir stands have herbaceous ground cover of pine grass, heart-leaf arnica, meadow rue, wild strawberry, and sweet-cicely.

Quaking aspen stands are interspersed among the Douglas-fir communities, generally on moister sites. Aspen forms closed canopy stands with dense understories of shrubs and herbaceous species. Common understory species include cow parsnip, valerian, angelica, sticky geranium, meadow rue, sweet-cicely, yellow hedysarum, and biscuit root.

Wetlands in the western part of the project area are associated with perennial and ephemeral streams (see Section 3.4). The streamside wetlands have shrub canopies of black cottonwood, alder, willow, red-osier dogwood, snowberry, alternate-leaf buckthorn, and thimbleberry. Common herbaceous species include cow parsnip, angelica, baneberry, and large-leaf avens. Wetlands in the prairie part of the project are also along drainages. Dominant vegetation includes mostly sedges and willows.

The eastern part of the project from near the ridge east of the Two Medicine River to Browning is vegetated predominantly with native prairie grasslands dominated by rough fescue and Idaho fescue with a diversity of other herbaceous species including: balsam-root, sticky geranium, silky crazyweed, northern bedstraw, Parry's oatgrass, bluebunch wheatgrass, Sandberg blue grass, prairie junegrass, blue grama, and green needlegrass. Common shrubs include serviceberry, snowberry, wild rose, chokecherry, and shrubby cinquefoil.

Noxious weeds occur at some sites where native vegetation has been disturbed by activities such as road construction, heavy livestock grazing, crop production, and urban/suburban development. Noxious weeds that occur on or near the project area include: spotted knapweed, hound's tongue, Canada thistle, leafy spurge, whitetop, Dalmatian toadflax, and field bindweed.

The Blackfeet people use many plants in the project area for food, medicine, or spiritual purposes. A partial list of plants of ethnobotanical interest known or likely to occur in the project area includes: sweet grass, cattail, field mint, cow parsnip, stinging nettle, horsetail, arrow-grass, arrow-head, baltic rush, cottonwood, chokecherry, golden currant, baneberry, reedgrass, hawthorn, blue camas, willow, red-osier dogwood, water-hemlock, creeping juniper, blue grama, wild onion, needle-and-thread, Indian ricegrass, sedges, yellow bells, sego lily, wild rose, avens, shrubby cinquefoil, wild licorice, pasque flower, saskatoon (serviceberry), bitterroot, spring beauty, winter fat, fringed sage, man sage, silver sage, wild strawberry, breadroot (Indian turnip), seneca root, buffalo-bean, prairie clover, prairie coneflower, puccoon, and scarlet globemallow.

See Section 3.6 for a discussion of Threatened and Endangered Plant Species.

Wildlife and Fisheries

The project area supports a high diversity of wildlife including: moose, elk, black bear grizzly bear, mule deer, white-tailed deer, Canada lynx, swift fox, coyote, red fox, striped skunk, bobcat, ground squirrel, bald eagle, golden eagle, prairie falcon, red-tailed hawk, northern harrier, kestrel, and northern goshawk. Gyrfalcon and snowy owl are also periodic winter visitors, particularly during severe winters in northern Canada.

See Section 3.6 for a discussion of Threatened and Endangered Wildlife Species.

Fisheries within the study area are present in Lower Two Medicine Lake, Two Medicine River, and Willow Creek. The Two Medicine River and Willow Creek have populations of rainbow, brown, and brook trout, mountain whitefish, burbot, longnose dace, pearl dace, white sucker, and mottled sculpin. Two Medicine Lake is stocked with non-native trout and is managed as a recreational fishery. There is little or no reproduction of fish stocked in the lake. Historically, westslope cutthroat trout were present in the reach of Two Medicine River inundated by construction of the reservoir. Any cutthroat trout that are present in the Two Medicine Lake are likely hybrids with rainbow trout (Pers. Com., Ira Newbreast, Blackfeet Fish and Wildlife Dept, July 2001).

3.5.2 Environmental Consequences

See Section 3.6.1 for a discussion of impacts to Threatened and Endangered Plant and Wildlife Species.

Construction of the project would result in removal of vegetation at the water intake facility, reservoirs, pipelines, and the water treatment plant. Vegetation at the intake facility, water treatment plant, and pumping station would be permanently converted to non-vegetated sites. Vegetation along pipeline routes would be re-seeded and replanted with native species.

Plants of ethnobotanical importance would be removed temporarily during construction and permanently at some facility sites (e.g., water treatment plant and intake facility). Losses or reductions in populations would have a negligible effect on availability of most plants of ethnobotanical importance. Large areas of undisturbed habitats, supporting a diversity of vegetation, would remain after construction of the proposed project.

Construction of the project would disturb plant communities that currently are free from noxious weeds. Construction activities would expose soils, rendering them especially susceptible to invasion by noxious weeds. Spread of noxious weeds from the ROW onto adjacent land can devalue land, reduce productivity, increase operational costs, and increase the potential for environmental degradation through improper herbicide use. Noxious weed control would involve monitoring the proposed construction area to determine if noxious weeds are present. Sites with noxious weeds would be treated with herbicides prior to ground-disturbing activities. Herbicides would be applied by a licensed applicator. In addition, all project construction-related vehicles will be thoroughly pressure washed prior to and when leaving the project construction sites to avoid the transfer of noxious weed seeds from areas where noxious weeds are present to areas where noxious weeds are not currently present. Following construction, if noxious weeds colonize disturbed sites in the project area, these weeds would be treated with appropriate herbicides. Fish in Lower Two Medicine Reservoir, Two Medicine River, and a tributary of Willow Creek would have the potential to be affected by the proposed project. Construction of the pipelines and other facilities would generate sediment that could be transported in tributary drainages to Two Medicine River and Willow Creek or generated by crossings of these streams. Because the project would be constructed in fall, during the low-flow period, negligible amounts of sediment would likely be generated and transported to Two Medicine River and Willow Creek tributaries via connecting drainages. The pipeline crossing of the Two Medicine River would be placed six to eight feet beneath (directional drilling or trenching) the bed of the river and, consequently would not affect fish and other aquatic organisms. Silt fences would be erected to prevent sediment from upland disturbances from entering the Two Medicine River and tributaries of Willow Creek. Impacts from sediment would be negligible given the low flows of affected streams and moderate-valued fisheries.

3.5.3 Mitigation/Compensation Measures

With the exception of the mitigation/compensation measures proposed for the protection of Threatened and Endangered Wildlife Species (see Section 3.6.3 and Appendix C) the impact evaluation in this EA has not identified a need or requirement for additional vegetation, wildlife or fisheries protection or mitigation/compensation measures beyond compliance with the provisions of all federal, state, and Tribal regulations, including the Blackfeet Tribal and Blackfeet Indian Agency Forest and Land Protection Stipulations, Section 404 and 401 of the Clean Water Act, and Blackfeet Tribal Ordinance No. 90 during project development and operation. Additional site-specific resource protection measures, such as relocation of ancillary facilities, or other protective actions in response to field conditions, will be included during construction if these actions are determined through consultation with the Tribe/BIA to be necessary to assure avoidable impacts will not occur.

3.6 ENDANGERED AND THREATENED SPECIES/CRITICAL HABITAT

3.6.1 Affected Environment

Threatened and endangered species include species listed or proposed for listing under the Endangered Species Act of 1973, as amended. Under Section 7 of the Endangered Species Act, activities conducted, sponsored, or funded by federal agencies must be reviewed for their effects on federally listed species or species proposed for listing as threatened or endangered.

Based on the February 1999 USFWS list of threatened, endangered, and proposed species, the USFWS December 1995 list of threatened, endangered, and proposed species that may be present in Montana counties, and range/habitat information, the following listed and proposed species may occur in the general project area.

- Grizzly bear (*Ursus arctos*), threatened
- Bald eagle (*Haliaeetus leucocephalus*), threatened
- Gray wolf (*Canis lupus*), endangered
- Canada lynx (*Lynx canadensis*), threatened
- Piping plover (*Charadrius melodius*), threatened
- Mountain plover (*Charadrius montanus*), proposed threatened
- Swift fox (*Vulpes velox*), candidate for threatened status
- Ute ladies' tresses (*Spiranthes diluvialis*), threatened
- Water howellia (*Howellia aquatilus*), threatened

Grizzly Bear (Threatened)

Grizzly bears inhabit the western portion of the Blackfeet Reservation in forested areas and prairie-riparian complexes adjacent to forested areas. A reliable estimate of grizzly bear numbers on the Reservation is not possible at this time because of insufficient data (Dan Carney pers. com. 2001).

As more secure mountainous habitats of the western part of the Reservation become more densely populated there is a tendency for bears to move into adjacent, more open prairie habitats. Prior to extensive human settlement of prairie habitats in the Northern Great Plains, grizzly bears were relatively common members of the prairie fauna.

The proposed project from Two Medicine Lake to East Glacier (i.e., intake, pumping station, water treatment plant, and about 4 miles of water pipeline) is within the Southeast Glacier BMU of the Grizzly Bear Recovery Zone.

Data collected on grizzly bears and grizzly bear habitat in the project area, over a 13-year period, indicate that there is extensive use of the project area, from Two Medicine Lake to East Glacier (and east of Two Medicine River), by grizzly bears (Dan Carney pers. com. 2001). Numerous locations of radio-instrumented grizzlies have been documented within the western part of the project area. The project area lies within the home ranges of at least six adult female grizzlies (Dan Carney pers. com. 2001).

In spring when, snow covers vegetation at high elevations, grizzly bears leaving their dens, seek food at lower elevations (e.g., grasses, other green vegetation, and carrion from livestock and wildlife). During spring and early summer when food is scarce at high elevations, grizzly bears move onto to prairie habitats where favored grizzly foods (grasses, sedges, and other herbaceous species) are abundant. Some bears move back to higher elevation as the prairie habitats become drier and montane habitats become free from snow. Other bears remain all summer at low elevations, where local patches of dense cover provide security from human activity.

Habitat maps generated by satellite imagery and compared with locations radio-collared grizzly bears indicate that the western part of the project area is excellent quality spring, summer, and fall grizzly bear habitat. The northern part of the pipeline system (from Two Medicine Lake for 3 miles southward) traverses mixed conifer forest. The portion of the project, extending from East Glacier north for about 1-2 miles, is comprised of especially high-value aspen and cottonwood habitats. Aspen and cottonwood habitats are prime spring and summer habitat for grizzlies. The mixed conifer habitats are usually more important for grizzlies in fall when berries ripen. The interspersion of conifer forest, riparian areas, and aspen stands within the project area increases the value of the habitat for bears during all seasons.

Canada Lynx (Threatened)

A proposed rule to list the Canada lynx as threatened under the Endangered Species Act of 1973 (Federal Register, Vol. 63, No. 130) was published July 8, 1998. A six-month extension to the rule was granted on July 8, 1999. The final decision to list the lynx as threatened was published in the Federal Register on March 24, 2000.

Lynx occur throughout the Rocky Mountains of Montana, primarily in Douglas-fir, spruce-fir, and fir-hemlock forests (Ruediger et al., 2000). In western Montana and northern Idaho, lynx habitat generally occurs at elevations above 4000 feet.

Lynx tend to be solitary animals that use early successional plant communities at high elevations for foraging and mature to old-growth forests with downed trees for denning. The abundance and distribution of lynx are closely linked with snowshoe hares, their main prey (Ruggiero et al., 2000).

In winter, lynx do not appear to hunt in openings, where lack of above-snow cover limits habitat for snowshoe hares (Ruediger et al., 2000). Generally, lynx prefer to forage in forest stands that are from 10 to 30 years old, with a high density of young conifers or branches that protrude above the snow. Older forests with a substantial understory of conifers or shrubs and young trees that provide dense cover that touches the snow in winter also provide good-quality lynx foraging habitat. Large open areas, whether human-caused or natural are usually avoided by lynx (Ruggiero et al., 2000). Lynx seem to prefer to move through continuous forest.

Lynx prey mainly on snowshoe hare, and the well being of lynx populations seems to be correlated with snowshoe hare populations. Lynx also prey on ruffed grouse, red squirrels and other rodents, and infrequently deer.

Snowshoe hare population densities reach their peaks in young, dense, moist coniferous forests that provide cover, protection from predators, and browse during all seasons. After a stand matures, less light reaches the forest floor and shrubs and small trees become less dense. Mature stands provide less food and cover for hares and their populations decline. During times of hare scarcity, lynx depend on alternate food sources, especially red squirrels. Populations of red squirrels are highest in mature, closed-canopy forests with large amounts of coarse woody debris and good cone production.

The value of foraging habitats varies based on stand age and structure and changes as stands undergo ecological succession. Some foraging habitat may support high densities of snowshoe hares, whereas other foraging habitat is unproductive hare habitat

Maternal denning habitat, usually associated with old-growth montane forests, is usually limited throughout the range of lynx. Large amounts of large coarse woody debris provide escape and thermal cover for kittens. During the first few months of life, kittens are left alone while the female lynx hunts. Downed logs and overhead cover provide protection of kittens from owls, hawks, and other predators. This habitat structure must be available in lynx home range, because kittens continue to require protective cover when they are old enough to travel. No old-growth forest would be affected by the proposed project, but isolated sites with large trees, snags, or piles of woody debris may provide suitable denning habitat for lynx.

Though not limited to roadless areas, lynx may be affected by human access into their habitat, especially during winter and the denning season. The extent and magnitude of disturbance that affects lynx is not known, but lynx do not appear to avoid roads. Although lynx may not avoid roads, roads can negatively affect lynx by allowing human disturbance in denning habitat and increasing access for hunting and trapping. Lynx cannot be legally trapped or hunted, however, illegal trapping or hunting could occur. Also, trapping of other furbearers could result in inadvertent capture or injury of lynx. Plowing or packing snow on roads and trails might also allow competing carnivores to more readily enter lynx habitat thus increasing competition for prey.

Currently, there are roads and trails that allow access to the study area and surrounding habitat during both summer and winter. Although none of the roads and trails in the study area appear to be groomed for snowmobile use, they are extensively used by snowmobiles and cross-country skiers which tends to pack the snow surface. These packed surfaces may increase competition among lynx and other predators.

Lynx have been documented to use habitat within the project area. Two lynx were observed about 2 miles northwest of East Glacier (Dan Carney pers. com. 2001) and tracks have been seen in the vicinity of the project. Blackfeet Fish and Wildlife Department trapping records indicate that trappers harvested seven lynx in the area west of East Glacier, in the two-year period before they were listed under the Endangered Species Act. Glacier National Park records indicate that a family of lynx was observed in the Two Medicine area within the last year. Analysis of DNA in hair samples resulted in two lynx being identified near the boundary of Glacier National Park and the Blackfeet Reservation.

The mixed conifer habitats in the northern part of the project area near Two Medicine Lake appear to be the most productive lynx habitat, however, lynx have been observed in aspen habitat in the project area (Dan Carney pers. com. 2001). The entire western part of the project area, above 4,000 feet elevation appears to be productive lynx foraging habitat.

Gray Wolf (Endangered)

The project area is part of the gray wolf recovery zone identified in the Northern Rocky Mountain Wolf Recovery Plan (1987). Although the project area has suitable wolf habitat, no denning or rendezvous sites have been identified. There is no evidence of pack activity in the project area, but individual wolves have been documented by tracks to be transient in the project area (Dan Carney pers. com. 2001). Wolves in the project area are probably dispersing from packs outside of the project area. Although wolves prey on moose, elk, and white-tailed deer in the project area, a limiting factor in the establishment of a wolf pack may be the low ungulate wintering populations that would serve as a prey base.

Bald Eagle (Threatened)

The project area is in the Upper Missouri Recovery Zone (Montana Bald Eagle Management Plan July 1994). Bald eagles are present as both seasonal migrants and nesting populations. Good bald eagle nesting habitat includes an adequate prey base, large mature trees to support nests, and low levels of human disturbance. Nest trees are usually larger than surrounding trees and located near water. Perch sites are usually in large trees or snags located close to foraging areas and nests.

Bald eagles sometimes use traditional communal roosts in winter, especially during periods of severe weather. These roosts can be located in large trees at the head of sheltered draws and may be many miles from bodies of water. Bald eagles are opportunistic foragers whose primary foods are fish and waterfowl. They also prey on birds, mammals, and big game carrion (especially during winter).

Feeding areas with abundant prey are essential components of bald eagle habitat. Areas where prey is concentrated such as fish spawning areas, lake inlets and outlets, or fish concentrations below reservoirs are particularly attractive to eagles (Montana Bald Eagle Working Group 1991).

The site of the water intake at Two Medicine Lake does not have large trees for perching near the proposed intake. The intake and pumping station would be constructed in grassland with patches of aspen and mixed conifer. The site is currently part of a developed campground.

A pair of bald eagles has nested for the last several years on the northwest shore of Two Medicine Lake, about two miles from the proposed water intake (Dan Carney pers. com. 2001). The home range of this nesting pair (i.e., 2.5-mile radius from the nest) includes the site of the proposed water intake. Habitat use by this breeding pair (foraging) includes all of Two Medicine Lake and extends down the Two Medicine River to at least Two Medicine Falls (Dan Carney pers. com. 2001).

Although a pair of bald eagles has been regularly nesting on Two Medicine Lake (Glacier National Park Bald Eagle Operational Plan and Habitat Management Guidelines 1999), it appears that heavy snow in April of this year destroyed the nest. If the eagles do not build an alternative nest, they will probably not nest this year (Rick Yates, Biological Technician, Glacier National Park, pers. com. 2001). It is likely that a new nest would be constructed near the upper end of Two Medicine Lake where most suitable nesting trees (i.e., large conifers or cottonwoods) are located.

Piping Plover (Threatened)

Piping plovers are shorebirds that nest and forage on sparsely vegetated shorelines of streams, lakes, alkali wetlands, mud flats, reservoirs, and playas (Reel et al 1989). Although piping plovers have been reported from the Reservation at Alkali Lake, more than 30 miles from the project area, none are known to be present in the project area. Suitable habitat for piping plovers may be present at in the project area at prairie potholes along Highway 2. Several of

the potholes have rocky, sparsely vegetated shorelines, habitats often selected for piping plovers for nesting.

Mountain Plover (Proposed Threatened)

The mountain plover was proposed for listing as threatened under the Endangered Species Act of 1973, as amended, on February 16, 1999 in the Federal Register. The population of mountain plovers has declined by more than 50 percent since 1966 to fewer than 10,000 birds. The decline is due to a combination of factors, including replacement of grasslands by agricultural and urban areas and the decline in prairie dogs (U.S. Fish and Wildlife Service, News Release of February 12, 1999, posted on Internet).

Mountain plovers are closely associated with short-grass prairies (Finch 1992). It prefers grassy areas devoid of shrubs with vegetative height less than 4 inches (Dechant et al. 2001). Frequently, short grass habitats modified by grazing ungulates, prairie dogs, or fires are selected over surrounding areas for nesting. Mountain plovers prefer sites with broad, level topography but they also nest in mountain foothill habitats of Montana, around livestock watering sites (Clark et al. 1989).

The most likely habitat for mountain plovers in the project area is along the easternmost 8-mile segment of the pipeline to Browning. This part of the project crosses foothill and prairie grasslands. There are no prairie dog colonies in this part of the project but ground squirrels are common and reduce the vegetative cover to some extent. This habitat appears to be marginal nesting habitat for mountain plovers because of the high density of grass over most of the area. Mountain plovers typically prefer nesting sites that are nearly devoid of vegetation (e.g., heavily grazed areas or prairie dog colonies).

During field reconnaissance studies on May 10, 2001, no mountain plovers were observed on the proposed area. The Montana Natural Heritage Program (1996) does not list mountain plovers occurring in Glacier County or adjoining counties. Mountain plovers usually return to breeding sites between mid-March and mid-April (Dechant et al 2001).

Swift Fox (Candidate Threatened)

Swift fox are closely linked with prairie dog colonies and concentrations of ground squirrels and other small mammals in prairie habitats. Early records indicate that swift fox were once common and widespread in prairie grasslands of the Browning-East Glacier area (Knowles et al. 1995). High-quality swift fox habitat is present along the pipeline segment from the Two Medicine River east to Browning.

Swift fox have been re-introduced to the Blackfeet Reservation several times since 1998. Swift fox were introduced in the southeastern part of the Reservation, more than 30 miles from the project area, and have expanded their range to include the project area. In 2000 and 2001, a pair of swift fox denned in the barrow pit on south side of Highway 2, about one mile

east of the junction of Highway 2 and Morning Gun West Road. This pair successfully raised a litter of pups both years. The pups were frequently seen near the den site (Dan Carney pers. com. 2001).

Ute Ladies' Tresses (Threatened)

Ute ladies' tresses is an orchid that grows in wetlands and swales in broad, open valleys, at margins with calcium carbonate accumulation. This species occurs in Idaho, Washington, Nevada, Utah, and Montana. In Montana it has been found at 11 locations in wetlands along the Jefferson, Beaverhead, Ruby, Gallatin, and Madison rivers. Wetlands on the study area that may have suitable habitat for this orchid, however, the study area is well outside of the known distribution of this species in Montana.

Water Howellia (Threatened)

Water howellia is an aquatic plant that grows in wetlands such as vernal pools, glacial ponds, and oxbow sloughs. Wetlands in the study area may have suitable habitat for this species, however, the study area is well outside of the known Montana distribution of this species in the Swan River Valley (Lake County).

3.6.2 Environmental Consequences/Mitigation-Compensation Measures

A Biological Assessment (BA) has been prepared to address potential impacts and mitigation measures required to protect threatened and endangered species and critical habitat affected by the proposed Blackfeet Community Water Project (see Appendix C).

Impacts to Grizzly Bears

The proposed project may affect the grizzly bear through the combined effects of direct habitat loss or alteration, fragmentation of habitat, reduced habitat effectiveness and security, and the direct and indirect risk of bear mortalities or removal from the population. Impacts to bears could occur during the construction phase and operational phases of the proposed project.

The proposed project would require clearing a 50 foot-wide right-of-way (ROW) through high-quality grizzly bear habitat in the Grizzly Bear Recovery Zone. Approximately 41 acres of mixed conifer, aspen, and native grassland habitat would be removed during construction of the pipeline system.

Currently, primitive roads, seismic lines constructed 30 or more years ago, and highway from East Glacier to St. Mary, degrade habitat in the project area. Most of the roads in the project area are primitive two-track trails. The proposed pipeline route in the BMU would follow 2.2 miles or be close to (i.e., within 0.25 miles) 4.4 miles of existing roads. None of the proposed pipeline in the BMU would be more than 0.25 from an existing road. Some of

these roads follow old seismic lines and others were probably constructed for petroleum exploration, logging, or recreation access.

Generally, it is believed that roads and associated traffic, even at low traffic levels, tend to displace grizzly bears away from suitable habitat within 0.25 – 0.50 miles of open roads. Although not all bears are displaced by traffic on roads, bears most sensitive to human activities avoid habitat near roads.

Grizzly bears could also be displaced from habitat around permanent facilities such as the water intake and water treatment plant. These facilities would have relatively high levels of human activity for operation and maintenance and would be a source of continual noise from pumps and other machinery. According to cumulative effects analysis protocols developed by the U.S. Forest Service (1988 and no date), a low-intensity point-source of noise and human activity may displace grizzly bears from habitat within 0.5 – 1.0 miles from the source.

A significant aspect of grizzly bear behavioral responses to human-associated disturbance is the variation associated with sex, age, and reproductive status. Higher proportional use of habitats near roads and human facilities has been observed in security-conscious bears (e.g., females with cubs or yearlings), subordinate bears (subadults), and a coinciding use of primary habitats farther from roads by adult male bears (Mattson et al 1987, McLellan and Shackleton 1989). Particularly in populations at or near regional carrying capacity, it is thought that security-conscious bears utilize productive habitats near human activities as a refuge from dominant, aggressive adult males, who select habitats farther away from human activities. While individual females may avoid interactions with adult males through this behavior pattern, mortality risk increases from other causes such as removal of problem or habituated bears, poaching, and collisions with vehicles. Because the project area appears to have a high proportion of use by females with young, it is likely that construction and operation of the project would have the greatest effect on this population segment.

The pipeline ROW would not be constructed as a road, but it is likely that it would quickly be explored as a road by recreational drivers with vehicles capable of driving on an unimproved surface. To prevent vehicles from driving on the ROW, signs would be posted that driving on the ROW is prohibited. Also, barriers (e.g., gates or “Kelly bumps”) would be installed at points where vehicles would have access to the ROW. The Blackfeet Fish and Wildlife Department would enforce road closure restrictions.

In addition to preventing the ROW from being used as a primitive road, 13.2 miles of existing road would be closed to reduce vehicle access in the project area. Existing roads would have signs posted and gates installed to prevent vehicle access.

In addition to direct and indirect habitat loss, removal of a linear strip of habitat for the pipeline ROW would allow longer sight distances through important grizzly bear habitat. Longer sight distances would tend to encourage illegal shooting of bears because bears could

be seen more easily and access along the ROW would be improved for pedestrians. To reduce mortality risk from increased sight distance along the ROW, bends (i.e., "dog legs") would be placed in the pipeline every 0,25-0.5 miles along the ROW. In addition, shrubs and trees would be allowed to encroach on the sides of the ROW. A ten-foot wide strip, directly over the pipeline would be the only part of the ROW that would be kept free of large woody vegetation.

Mortality risk would also increase, especially in spring, as a result of clearing of a linear strip through forested habitat. As the ROW becomes revegetated, it is likely that grasses and forbs would be the dominant vegetative cover. Grasses and forbs are especially important grizzly bear food in spring when plants under forest canopies have not yet greened up and become succulent.

During construction of the project, heavy equipment clearing the ROW and excavating the trench for the pipeline could displace bears from the vicinity of the project to habitat farther from the project. This displacement would temporarily (during construction) reduce foraging and security habitat and increase competition among bears for habitat more secure from human activities. Competition that would result from displacement of bears away from the project area could increase mortality risk for bears. Female grizzlies with cubs would become more vulnerable to conflicts with male bears, resulting in death or injury to both the female and cubs. Bears likely would be forced into closer contact with humans near East Glacier, campgrounds, and at local ranches.

To reduce the potential that displaced bears would come into conflict with other bears, construction of the project would take place in late summer and early fall, when the greatest amount of habitat in the BMU is accessible to bears. By late summer and early fall, many high-elevation meadows, avalanche chutes, and shrub fields are free of snow and provide forage for grizzly bears. Although bears would be displaced as a result of construction, the probability of a displaced bear encountering another bear would be reduced as bears become dispersed more widely throughout the BMU. In spring and early summer, bears tend to be more concentrated at lower elevations (e.g., project area) because snow at higher elevations prevents foraging.

Proposed mitigation measures including road closures, intensive garbage management, restriction of camping at Red Eagle Campground, and special management of an 80-acre parcel on the shore of Two Medicine Lake would reduce potential impacts to grizzly bears from increased mortality risk associated with illegal shooting, habituation, habitat loss, and displacement. Road closures and closure of the pipeline ROW to motorized traffic in summer and winter would increase habitat security for grizzly bears in the project area (see Appendix C, Biological Assessment).

Over the long term (i.e., following construction and revegetation of the ROW), habitat security along the pipeline routes would likely improve over existing conditions with proposed mitigation measures. This improvement in habitat security probably would be

offset by the long-term losses in habitat security that would result from reductions in habitat quality surrounding the intake structure and pumping station (zone of 0.5 – 1.0 miles).

Impacts to Lynx

Potential effects to lynx could result from alteration of habitat, displacement from habitat by human activities, increased competition with other carnivores (e.g., coyotes) and alteration of prey abundance and distribution (Buskirk et al., 1999). Approximately, 4 - 5 acres of foraging habitat would be lost as a result of ROW clearing and construction of other facilities.

Although not well documented, studies suggest that competition with other carnivores (e.g., coyote, bobcat, and mountain lion) can adversely affect lynx (Buskirk et al. 1999). Lynx are better adapted than these carnivores to deep snow conditions. Construction of roads and use of roads in winter and packed snow surfaces (e.g., cross-country ski trails and snowmobile trails) can increase competition between lynx with other carnivores by allowing them improved access to habitat with deep snow, better suited to lynx

Areas proposed for disturbance have limited potential for denning due to the scarcity of large amounts of woody debris. Removal of the forest canopy likely would not reduce potential denning habitat because most trees are relatively young with few large snags and large downed logs that could provide maternal denning sites.

The proposed action could increase human access into lynx foraging habitat. The pipeline ROW would provide human access mainly in winter for skiers, but also during other seasons for hikers, mountain bikers, hunters, and other recreationists. Increased human access would not likely affect lynx denning because no suitable denning habitat would be affected.

Under current conditions existing roads are used by snowmobiles and provide access for coyotes into lynx habitat in winter when snow is deep. Coyotes and other carnivores (e.g., bobcat and mountain lion) that may compete with lynx are able to access parts of the project area near existing roads. With construction of the pipeline between Two Medicine Lake and East Glacier, there is a high probability that snowmobilers would use the pipeline ROW as a trail and increase winter access for carnivores that could compete with lynx. The proposed prohibition of snowmobile use of the ROW would prevent increased access. Signs would be placed at potential access points on the ROW informing the public that the ROW is closed to snowmobiles. Like other road closures, the Blackfeet Department of Fish and Wildlife would enforce closures.

Impacts to the Gray Wolf

The proposed project would remove forest cover from a linear strip of habitat, however, this alteration would have a negligible affect on abundance of prey (e.g., moose, deer, and elk) or the potential for wolves to use surrounding habitat. Increased human access into forested

habitat may increase the potential for wolf mortality through illegal trapping or shooting. However, this risk would be slight since wolves do not regularly use the project area.

Impacts to Bald Eagles

The proposed project (i.e., water intake and pumping station) would not affect the nest site of bald eagles on Two Medicine Lake. The nest is far enough away (more than 2.5 miles) that noise and human activity associated with construction of the water intake and pumping station would have negligible effects on nesting and brood rearing.

Foraging bald eagles could likely be displaced from an area around the intake and pumping station during construction. The extent to which this pair of eagles would be displaced would depend on their tolerance to disturbance. Eagles vary in tolerance to human presence and activity depending to some extent on how accustomed they are to humans and human activity.

Impacts to Piping Plover

No potential piping plover habitat (i.e., potholes or ponds in prairie grasslands) would be affected by the project. The pipeline segment, for about 3 miles west of Browning, is adjacent to several prairie potholes but does not encroach on wetlands habitat that may be potential piping plover habitat.

Impacts to Mountain Plover

Pipeline associated with the proposed project would be placed in native grasslands that appears to be unsuitable or marginal mountain plover nesting habitat.

Impacts to Swift Fox

The portion of the proposed project that traverses prairie grasslands (about 8 miles west of Browning) would affect potential swift fox denning and foraging habitat through construction of the pipeline. Pipeline construction could temporarily displace swift fox from potential foraging habitat during the construction phase of the project. If swift fox are denning in the immediate vicinity of the project, it is likely that construction activity would displace adults away from the den, at least during daytime periods of construction. Displacement could prevent the adults from securing adequate food for young foxes or prevent adults for adequately caring for their young. This effect would be short-term (i.e., during construction) and have negligible influence on the ability of swift fox to secure prey in adjacent undisturbed habitats. If trenching for pipeline construction were to destroy a den, swift fox pups could experience direct mortality.

Impacts to Ute Ladies' Tresses

Although the proposed project would be constructed through wetlands that could harbor Ute ladies' tresses, it is unlikely that the species occurs in the project area. All known records of occurrence are several hundred miles away in central Montana wetlands.

Impacts to Water Howellia

Although the proposed project would be constructed through wetlands that could harbor water howellia, it is unlikely that the species occurs in the project area. All known records of occurrence are in the Swan Valley.

3.7 CULTURAL RESOURCES

3.7.1 Affected Environment

During July 2001, Ethos Consultants, Inc. conducted a Class III cultural resource inventory within and in the vicinity of the proposed Blackfeet Community Water Project (Ethos Consultants, Inc., July 2001). Prior to implementation of fieldwork, Ethos Consultants, Inc. obtained Cultural Resource Information System (CRIS) and Cultural Resource Annotated Bibliography System (CRABS) searches from the Montana State Historic Preservation Office for the project area. The CRABS search indicated that 12 previous cultural resource projects had been conducted wholly or in part within the project area, and that three previously recorded cultural properties were present including the historic Great Northern Railroad, which the proposed pipeline route to Browning crosses twice, a prehistoric Native American campsite, and historic US Highway 2 located in the general vicinity of the Browning pipeline segment, but well outside the area of proposed disturbance. Both in and out of the field, before, during and after field work was completed, formal and information consultation was held with both staff of the Blackfeet Tribal Government and members of the community in an attempt to identify any traditional properties and/or concerns as they relate to the proposed project. (Brumley 2001)

During the inventory, all portions of the proposed waterline routes were examined by pedestrian inventory. This involved linear to "zig-zag" transects centered on the proposed construction corridor by each member of the two person inventory crews. All existing subsurface exposures within and adjoining the proposed route were examined in detail for the possible presence of buried cultural materials. The proposed water pipeline rights-of-way corridor was examined, centered on the proposed ditchline. Along the proposed routes where the sites for the proposed water intake pump building; a proposed water plant site, and water storage tanks were to be situated, an area 400 feet in diameter around each proposed development location was examined. (Brumley 2001)

Two previously recorded cultural properties were identified and evaluated in the course of the inventory. One of these is the historic Great Northern Railroad. The other appears to be a prehistoric Native American campsite. No previously unrecorded cultural properties were identified. As well, one locality where traditional cultural practices are being conducted was

identified in proximity to a proposed development area. Given its apparent non-historic age, that locality has not been assigned a Smithsonian site number. (Brumley 2001)

3.7.2 Environmental Consequences/Mitigation-Compensation Measures

The proposed Browning segment of the water project crosses the historic Great Northern Railroad property at two locations. The actual pipeline will be "pushed" under the railroad using approach holes on either side of the property. As such, the pipeline will have no effect on the property or any of its components. No recommendations for avoidance or additional cultural resources work at this site are recommended. (Brumley 2001)

At the time it was originally documented in 1995, the apparent prehistoric Native American campsite was characterized by a variety of archaeological materials suggesting its use as a campsite area by prehistoric Indian peoples within approximately the last 1500 years. In the course of the cultural resource inventory work conducted for the Blackfeet Community Water Project, no cultural materials were observed within or adjoining the proposed development areas. However, subsurface exposures at this site were limited. Given the kinds and amounts of materials previously found and documented at this site, subsurface testing in intact surfaces where both the proposed pipeline and intake pump building are to be situated is recommended prior to any final decision regarding the site in relation to the proposed project. (Brumley 2001)

The traditional cultural practices area is apparently recent (within the last 150 years) and is characterized by both abandoned and currently used sweat lodges, and recent and weathered cloth offerings hung in trees. The Lower Two Medince segment of the proposed water pipeline passes outside, but near the western margins of the locality. No offerings or structures were observed any closer than 100 feet from any portion of the rights-of-way associated with the proposed project. Heavy timber will shield the proposed rights-of-way location from the site as well. Enquiries were made of elders within the community which indicated their willingness for the proposed project developments to proceed in the vicinity of this locality. No further action in terms of this locality and proposed developments is recommented. (Brumley 2001)

3.8 FLOODPLAINS

3.8.1 Affected Environment

The proposed Blackfeet Community Water Project does not include the location of any facilities within formally designated (FEMA-FIRM) floodplains. However, the proposed pipeline route to Browning must unavoidably cross the floodplain of the Two Medicine River. There is no practicable alternative to this crossing. The Two Medicine River floodplain was subject to significant flooding events in 1964 during regional flooding that resulted in the failure of the lower Two Medicine Dam, and again during significant flooding events in 1975.

3.8.2 Environmental Consequences/Mitigation-Compensation Measures

Executive Order 11988, "Floodplain Management" requires Federal agencies to avoid action, to the extent possible, which will result in the location of facilities in floodplains and/or affect floodplain values. In compliance with E.O. 11988, and USDA Departmental Regulation 9500-3, "Land Use Policy", it is USDA's policy to avoid to the extent possible:

1. The long and short-term adverse impacts associated with the occupancy and modification of floodplains and

2. Direct or indirect support of floodplain development wherever there is a practicable alternative.

The unavoidable crossing of the Two Medicine River floodplain by the proposed pipeline route to Browning will not directly or indirectly adversely affect the floodplain. The trenched crossing will be conducted perpendicular to the axis of the Two Medicine River and floodplain, and all appropriate bank stabilization and erosion control measures will be implemented. Floodplain values will be restored and preserved following pipeline installation. Burial depth for the pipeline will be sufficient to prevent exposure of the pipeline by scour events associated with flood-flow conditions.

3.9 SOCIO-ECONOMIC/ENVIRONMENTAL JUSTICE ISSUES

3.9.1 Affected Environment

Browning serves as the Blackfeet Tribal Headquarters. The 1990 Census estimated the population of the Blackfeet Indian Reservation to be 8,488; of this, 7,031 were American Indian/Alaskan Native. The Blackfeet Tribe/BIA estimated the population on the Blackfeet Reservation to be 9,659. The 1990 Census indicated that 65% or 5,548 on the Blackfeet Reservation live in Browning. The American Indian/Alaskan Native population increased by 2,628 from 1990 to 1997. This is an average annual growth rate of 5.4%. If 65% of this population growth lives in Browning, it would increase the Town's population by 1,708. Therefore, the population of Browning in 1997 would be 7.256. For comparison, the Town of Browning currently has 1,926 commercial/residential water service connections and it is estimated that there are 4 people per service connection. Based on these numbers, there are 7,704 people living in Browning and the surrounding Housing Projects today. From 1997 to 2000, Browning's population has grown at a rate of 2% per year. There are also a large number of people who live outside of Browning, but work or attend school there. Therefore, the water system needs to be able to handle the increased water use during the week. Base on current trends, the population in Browning is expected to grow at a rate of 2% per year over the next 20 years. By the year 2010, it is estimated that the population of Browning will reach approximately 9,390 and 11,500 by the 2020 based on the above growth rates. (IHS 2001)

East Glacier is a resort community with approximately 400 year round residents, based on Census 2000 data. Of the 400 year round residents, 205 are American Indian/Alaskan

Native. During the summer tourist season the transient population may exceed 1100 people. Blackfeet Housing has long-term projections to build 100 new homes that will house approximately 400 more residents. This brings the design year population for the proposed Blackfeet Community Water Project to about 800 residents. It is also anticipated that the proposed new water treatment plant would serve Glacier Park Inc. and would be a large consumer of treated water. (IHS 2001)

The major components of the economic base of Glacier County and the Blackfeet Indian Reservation are agriculture, oil and gas development, government employment, and tourism. Government transfer payments and retirement income also contribute to the area's economy. (Hydrometrics, Inc. 1995)

3.9.2 Environmental Consequences/Mitigation-Compensation Measures

Selection of the Proposed Action Alternative would not significantly affect the population and demographic characteristics of Glacier County and the Blackfeet Indian Reservation. Construction and operation of the proposed project would have positive effects on the economies of Glacier County and the Blackfeet Indian Reservation. Project construction jobs, however, would be short-term. Local expenditures by project construction contractors and project workers would benefit local businesses and government. Significant positive effects would result from the ability to supply the population of Browning and East Glacier with a reliable and safe source of drinking water.

Construction and operation of the proposed project would not create significant demands for additional public or private services. The use of heavy vehicles to transport equipment and materials to and from the project area would not be expected to damage state highways or county roads serving the project area. Project vehicles would comply with state and local weight limits for highways and roads. Boring methods proposed for installation of the pipeline under paved roads and highways will not interrupt vehicle traffic, nor will train traffic be interrupted during installation of the pipeline under the Santa Fe/Burlington Northern rail line. Temporary detours will be provided for vehicle traffic during the proposed open-cut trenching of several non-paved roads.

Environmental Justice became Federal law through *Executive Order No. 12898 Federal Actions to Address Environmental Justice in Minority and Low Income Populations.* Environmental Justice covers the fair treatment of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs and polices. Fair treatment means that no racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from the operation of industrial, municipal, and commercial enterprises, and from the execution of Federal, State, or Tribal programs and policies. American Indian programs are explicitly mentioned in the *Executive Order.*

The *Executive Order* also created the National Environmental Justice Advisory Council, which is an interagency working group chaired by the Environmental Protection Agency (EPA). The EPA has officially recognized since 1984 that Tribal Governments are the "primary parties for setting standards, making environmental policy decisions, and managing programs and reservations consistent with Agency standards and regulation…" through its approval and implementation of its *Internal Policy for the Administration of Environmental Programs on Indian Reservations.* Within the EPA's Office of Water, the American Indian Environmental Office is involved in environmental issues concerning American Indian populations. The Blackfeet Indian Reservation falls within the jurisdiction of EPA's Region 8, headquartered in Denver, Colorado.

The proposed Blackfeet Community Water Project has been analyzed for the equity of the distribution of risks and benefits. The majority of the people on the Blackfeet Indian Reservation constitute a minority population (i.e., American Indians) and income levels are low. The are no disproportionate risks to minorities or low-income individuals associated with approval of the proposed project. The proposed project will result in benefits to Tribal members and people with low incomes through the providing of a reliable and safe source and supply of drinking water.

3.10 OTHER ENVIRONMENTAL RESOURCES

3.10.1 Air Quality

The Blackfeet Indian Reservation is designated as a Class II Area under the Federal Prevention of Significant Deterioration (PSD) regulations, allowing for moderate growth. Both air quality and visibility are excellent on the proposed project site. The nearest Class I Area is Glacier National Park, located adjacent to the western-most portions of the project area. Prevailing winds are from the west and southwest with an average velocity of 12.5 mph (USFS 1991).

Existing source of air pollutants in the project area include limited agricultural operations, vehicle traffic on unpaved roads and trails, vehicle emissions, and occasional wildfires. The primary air pollutants emitted include particulate (dust and smoke), and hydrocarbons and carbon monoxide (incomplete combustion products from vehicles and other engines. (BIA 1999)

Construction and operation of the proposed Blackfeet Community Water Project would result in minor amounts of emitted air pollutants. The primary sources of air pollutants would be vehicle traffic on unpaved roads and access trails, construction equipment and vehicle exhaust, dust associated with right-of-way clearing, trench excavation and construction activities. Primary air pollutants would be particulate, carbon monoxide, and oxides of nitrogen. The quantities of air pollutants emitted would be minor and short-term. Because of the small amounts of air pollutants emitted, there would not be a discernable effect on the air quality of the project area or the adjacent Class I airshed (Glacier National Park).

Although the air pollutant emissions would be minor, mitigation measures would be followed to reduce the potential impact of the project on the surrounding area. The primary emission source would be construction equipment and vehicle travel on the area's roads and access trails during the construction period and construction activities. Care would be taken to restrict vehicle speeds, and if need be, water and/or other stabilizers would be applied to access roads, trails, cleared right-of-way, and soil stockpiles to reduce particulate emissions. Vehicle exhaust emissions would be reduced through routine maintenance of vehicles and effective tune-up programs.

3.10.2 Visual Resources

The proposed Blackfeet Community Water Project is located within the boundaries of the Blackfeet Indian Reservation. Neither the Blackfeet Tribe nor the Bureau of Indian Affairs (BIA) have conducted a visual resource inventory or established a visual resource classification system for this portion of the Blackfeet Indian Reservation.

The visual resources along the proposed pipeline route to Browning are typical of the plains area east of the Rocky Mountain Front, with non-timbered to patchy timbered hillsides and small valleys in open rolling topography and occasional small ephemeral, intermittent, and perennial stream drainages. Visual resources associated with the proposed location of the pump house and water treatment plant include high quality visual resources of lower Two Medicine Lake and views into the eastern portions of Glacier National Park.

During the construction of the proposed pipeline portion of the project, the visual resources of the area would be temporarily adversely affected. This impact, however, would be short-term, and the visual resources along the pipeline routes would not be significantly affected following successful reclamation. Construction and operation of the proposed pump house would result in the addition of an unavoidable long-term impact to the visual resources of the lower Two Medicine Lake area, primarily as viewed from adjacent Highway 49 and by users of the lake. This impact, however, is not considered significant because of the existing visual presence of the lower Two Medicine lake dam, which lowers viewer expectations, and by the small size of the newly proposed pump house facilities. In addition, construction materials for the pump house would maximize the use of non-reflective materials and outside coloration compatible with the surrounding natural setting. The construction and operation of the proposed water treatment plant would minimally affect the visual resources of the site area adjacent to Two Medicine River and Highway 49.

3.10.3 Noise

During the construction phase of the proposed project, construction activities would provide a short-term increase in the ambient noise levels in active construction areas. These short-term increases in ambient noise levels would be most noticeable in areas along the pipeline routes that are near areas of human activity and residences. The short-term duration of construction activities within these areas, as well as a daylight-hours only construction schedule will reduce the significance of this impact. Operation of the pump station and water

treatment plant will provide a minimal unavoidable increase in ambient noise levels associated with these areas.

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APPENDIX A

LIST OF PREPARERS
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LIST OF PREPARERS

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Wilson, Mark. Supervisor, U.S. Fish and Wildlife Service, Helena, Montana

Wiseman, Fred. Environmental Coordinator, Indian Health Service, Billings, Montana

AGENCY CORRESPONDENSE

APPENDIX B

UNIFORM ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL REVIEW PUBLIC SCOPING AND PUBLIC NOTICE

APPENDIX C

BIOLOGICAL ASSESSMENT

APPENDIX D

SPECIFICATIONS, TECHNICAL PROVISIONS, SECTION 10 EXCAVATION, BIDDING AND BACKFILL FOR PIPELINES AND APPURTENANT STRUCTURES

APPENDIX E

AFFECT ACREAGE TABLE BY LAND OWNERSHIP
BLACKFEET COMMUNITY WATER PROJECT